Amendments to the Claims

Listing of Claims:

Original Claims 1 - 12 (canceled).

Amended Claims 1 – 10 (canceled).

Claim 13 (new). A method for controlling a brushless DC motor, which comprises iteratively repeating the following method steps for adjusting an operating point of the motor for a predetermined setpoint speed:

adjusting the speed of the motor to a value of the setpoint speed by varying an average terminal voltage of the motor, and thereby determining the average terminal voltage of the motor by pulse width modulation;

detecting a average power requirement of the motor and a lead angle between a rotor of the motor and a driving magnetic field; and

approximating the lead angle to a predetermined desired value as a function of the speed and the average power requirement.

Claim 14 (new). The method according to claim 13, wherein the desired value is a value of the lead angle that maximizes an efficiency of the motor for respectively associated values of the speed and average power requirement.

Claim 15 (new). The method according to claim 14, which comprises determining the desired value of the lead angle from a characteristic map specifying the lead

angle with a highest efficiency for a plurality of operating points of the motor each defined with reference to a speed and an average power requirement.

Claim 16 (new). The method according to claim 15, which comprises obtaining the desired value of the lead angle for the actual speed and the average power requirement from the characteristic map by interpolation.

Claim 17 (new). A control device for a brushless DC motor with a rotor, comprising:

an AC/DC converter supplied by an intermediate direct voltage circuit for feeding the DC motor, said AC/DC converter having a plurality of switches;

a pattern generator for controlling said switches of said AC/DC converter, said pattern generator having a periodic switching signal pattern of variable frequency and phase, and having an input for a representative signal for an instantaneous phase position of the rotor of the DC motor;

said pattern generator including a device for detecting an average current strength delivered by said AC/DC inverter and a device for adjusting a lead angle between the phase position of the rotor and the switching signal pattern depending on a detected average current strength and a speed of the motor; and

a device for regulating an average terminal voltage of the motor with reference to a setpoint speed, said control device being configured to carry out the method according to claim 13.

Claim 18 (new). The control device according to claim 17, wherein said device for adjusting the lead angle includes a PLL circuit configured to be lockable to a frequency of the input signal representative for the phase position of the rotor.

Claim 19 (new). The control device according to claim 17, wherein said device for adjusting the lead angle includes control means for predefining a desired value of the lead angle depending on the detected power and speed of the motor.

Claim 20 (new). The control device according to claim 19, wherein said control means includes a memory device for storing a characteristic map of the motor, the map specifying combinations of motor speed and power with reference to the desired value of the lead angle that minimizes the power requirement of the motor.

Claim 21 (new). The control device according to claim 17, wherein said device for adjusting the lead angle comprises means for deriving the speed from an input signal representative for the phase position of the rotor.

Claim 22 (new). The control device according to claim 17, wherein said device for adjusting the lead angle comprises a desired value transmitter for generating a representative signal for a desired value of the lead angle and a regulator for matching an actual lead angle to the desired value using the representative signal, wherein the representative signal may have values above and below a representative value for a lead angle of 0°.